



United States Geological Survey Workforce Planning Data Guide

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USGS Demographics, Measures and Metrics

Standardized USGS Personnel Data

The USGS Human Resources Office researched a wide variety of generally accepted human capital metrics, and established standardized definitions and formulas with clear terminology in order to eliminate confusion in understanding, producing, and using USGS Workforce Demographics, Metrics, and Measures. Using these standards allows the USGS to concentrate on the most useful demographics, measures, and metrics, and ensures that the data is pulled and results calculated in the same way. As a result, USGS standard demographics, measures, and metrics are comparable across the USGS and across time, regardless of the organizational level.

The FPPS Datamart

USGS workforce data is pulled from the Federal Payroll and Personnel System (FPPS) Datamart. The FPPS Datamart is a state-of-the-art, web-based data warehouse environment using an Oracle database and an analytical query tool that pulls data from the Datamart. The Interior Business Center (IBC) in the Department of the Interior manages the FPPS Datamart, the repository for USGS workforce data.

For information on getting access to the Datamart, go to <https://dmartportal.ibc.doi.gov/DMARTPORTAL/> and see the information under "Datamart Forms". You must have approved FPPS and Datamart access before accessing the data in the Datamart.

As of November 1, 2017, the Department of the Interior has moved to a new data mining tool called OBIEE for use with the Datamart. Hyperion is no longer accessible, and Hyperion queries no longer function.

For information on obtaining the OBIEE data mining tool and required training, go to: https://dmartportal.ibc.doi.gov/DMARTPORTAL/FILES/?fn=Homepage_NewLicense1.html

If you run your own data from the Datamart:

The data results for each user will be confined to the organization(s) within their particular FPPS security profiles.

CONFIDENTIALITY: Employees who run FPPS Datamart queries are subject to the same security requirements and restrictions as with any other FPPS usage.

1. Query results contain individual employee's data that is sensitive and subject to the Privacy Act, and may contain information that is privileged, confidential, or otherwise protected from disclosure under applicable federal laws.
2. Access to FPPS Datamart query results that are sensitive and subject to the Privacy Act is restricted to the use of the individual(s) for whom it is intended, and these results must not be given, shown, or otherwise related to unauthorized persons.
3. Only employees who have a legitimate need for this personnel data in the performance of their duties in support of legitimate, official government business purposes should have access to the information.

4. Even if you may have legitimate access, sharing information on individuals to others who do not have a legitimate need to know the information and would not have access to this information otherwise is a violation of the law for which there are legal penalties.

As a rule of thumb, data compiled (rolled up) from the results of 10 or fewer employees should be regarded as sensitive because it may be possible to identify data associated with individual employees. Contact your Human Resources Office for guidance where there are any concerns about whether data results are sensitive and/or subject to the Privacy Act.

While data compilations involving 10 or more employees are probably not subject to the Privacy Act, they may be sensitive in nature because of issues identified, and care should be taken with the dissemination of their results. If data raises concerns about sensitive issues, contact upper management or your Human Resources Office for advice on how to handle it.

Consult the rules and guidelines for handling electronic workforce data securely at the Office of Enterprise Information Site's internal site and at the Datamart "Rules of Behavior" located at https://dmartportal.ibc.doi.gov/DMARTPORTAL/FILES/?fn=Homepage_NewLicense1.html .

Additional Federal Workforce Data Availability

Additional Federal Human Resources data is available from the Office of Personnel Management's FedScope tool at <https://www.fedscope.opm.gov/> . FedScope access is available to anyone, and provides comparable data across Federal agencies, including the Department of the Interior, down to bureau (USGS) level.

Data types available include location, age, education level, gender, pay plans, grade, length of service, occupations and series, STEM and health occupations, supervisory status, type of appointment (Permanent or other), and work schedule. Employment data is available by quarter back to FY 2010, and by FY back to 1998. Diversity data is available by quarter back to FY 2010, and by FY back to 2006. Accessions, and Separations trends data is available back to FY 2005, and employment trends data is available for the latest 5 fiscal years, or the latest 5 quarters.

Glossary of Terms used in USGS Demographics, Measures and Metrics

For information and definitions for most personnel data fields, see the [Guide to Personnel Data Standards](http://www.opm.gov/feddata/guidance_gp59.asp) found on the OPM website at: http://www.opm.gov/feddata/guidance_gp59.asp

Appointment Types

See Type of Appointment

Combined File

The data in the FPPS Combined File provides a current snapshot of employee data. Personnel fields are updated nightly, and payroll fields are updated on a biweekly basis after pay calculate takes place. This file type should NOT be used for data that will be pulled on a recurring basis because the results cannot be replicated after the day they were originally run.

Combined History File

The data in the FPPS Combined History File provides a snapshot of employee data at a specific point in time: the end of a specified pay period. Personnel and payroll fields are updated on a biweekly basis after pay calculate takes place. The data is replicable for that specific pay period whenever it is run. This is the file type that employee data should be run from for workforce planning purposes.

USGS came up on FPPS on 5/10/1998, and can access historical Fiscal and Pay Year data back to that point in time.

The USGS came up on FPPS on 5/10/1998, but data from the system preceding FPPS, called PAY/PERS, is also available to query. Users can access Fiscal and Pay Year data by specified Pay Period for 1990 through 1994, quarterly data for 1995 through 2001, and for Pay Periods 2002 01 and forward.

• FPPS

- Current and back through 200201
- 200126 (Payroll), 200120, 200114, 200107, 200101
- 200026 (Payroll), 200020, 200013, 200007
- 199926, 199920, 199913, 199907
- 199826, 199820, 199813

• PAY/PERS

- 199807
- 199727, 199721, 199714, 199708
- 199626, 199621, 199614, 199608
- 199526, 199521, 199514, 199507
- 199426, 199421
- 199326, 199321

- 199226, 199221
 - 199126, 199121
 - 199026, 199021
-

Datamart

The Federal Payroll and Personnel (FPPS) Datamart is a state-of-the-art, web-based data warehouse environment using an Oracle database and modern analytical query tools. OBIEE is the current data mining tool associated with the Datamart. Hyperion was removed from usage on November 1, 2017.

The USGS came up on FPPS on 5/10/1998, but data from the system preceding FPPS, called PAY/PERS, is also available to query. Users can access Fiscal and Pay Year data for 1990 through 1994, quarterly data for 1995 through 2001, and pay period data for Pay Period 2002 01 and forward. (FPPS: Current through 200201; 200126 (Payroll), 200120, 200114, 200107, 200101; 200026 (Payroll), 200020, 200013, 200007; 199926, 199920, 199913, 199907; 199826, 199820, 199813.) (PAY/PERS: 199807; 199727, 199721, 199714, 199708; 199626, 199621, 199614, 199608; 199526, 199521, 199514, 199507; 199426, 199421; 199326, 199321; 199226, 199221; 199126, 199121; 199026, 199021.)

Demand Analysis

The determination by the organization of the required staff size and skill mix needed to carry out its strategic objectives.

Demographics (Demography)

Demographics describes data reflecting selected population, such as age, race, income, education, location, etc. Demographic trends data describes changes in demographics in a selected population across time.

Employee Engagement Index

An Employee Engagement Index is based on periodic surveys conducted to gauge the opinions of employees. Employee surveys and results help management to identify and analyze the most compelling issues facing employees.

FPL

See Full Performance Level

FPPS – Federal Payroll and Personnel System

The Federal Payroll and Personnel System (FPPS) was designed to track employee payroll data by individual employee in order to issue W-2s at the end of the pay year. FPPS tracks employee-related data (such as name, occupational series, gender, age, organization, tenure, type of appointment, supervisory status, and dates of accession, promotion, service comp leave, retirement eligibility, etc.) as of a specific point in time (end of pay periods). FPPS also tracks information on every personnel action that is associated with individual employees.

FPPS is unsuited for organizational cost accounting, because all costs are associated with the employee in the organization they are in at the time the data is pulled, whether or not they have moved within the bureau, and whether or not another organization or cost center has paid any of their expenses.

Data pulled from FPPS will almost never match with data pulled from any of the financial systems. The last pay period in the Fiscal Year seldom occurs on September 30th, so there will almost always be a difference in the end of fiscal year date for data from FPPS versus the financial systems. Gross Year to Date salary figures in FPPS accrue on a Pay Year basis, which is close to a Calendar Year. Gross Year to Date amounts as of the end of any fiscal year only accrue data from pay periods one through 20/21 of that fiscal year, and do not include amounts from pay periods 20/21 through 26/27 of the prior pay year.

FTE

FTE, or Full Time Equivalent, is not the same thing as a count of employees. FTE reports how many hours are worked, not how many employees do the work.

For FTE reporting purposes, one FTE (or work year) equals 2,080 work hours, which is equivalent to one year's full time work schedule (no overtime). One FTE for one Pay Period equals .04 (2,080 hours divided by 26 Pay Periods).

FTE does not equate to a "body count" (113A Monthly Report of Federal Civilian Employment) however, because an FTE may reflect 2 or more employees on part time work schedules or other than permanent (temporary or term) appointments.

FTE (Full-time Equivalent) employment measures reflect all direct hire Federal civilian officers, employees and direct hire nationals of foreign countries and U.S. territories in or under the United States Government, including Government-owned or controlled corporations, who are paid salaries, wages, or fees for the personal service they render. FTE numbers are reflected in the official monthly SF113-G Monthly Report of Full-Time Equivalent/Work Year Civilian Employment generated for OMB.

Straight Time (reported in Lines B of the 113G report) refers to hours of work for which employees are paid at their rate of basic pay, including paid leave (annual, sick, holiday, military, and other). Straight Time excludes hours paid at overtime rates, terminal leave hours, and hours earned as Compensatory Time. Compensatory Time is reported as Straight Time when it is taken. If Compensatory Time is not taken but is paid at overtime rates, then hours paid should be reported as Overtime. Credit Hours and Time Off Incentive Awards are reported as Straight Time when taken. Overtime is reported in Lines C.

Full Performance Level (FPL)

The Full Performance Level identifies the fully functional grade level of a properly classified position. It is also described as the target grade level in a career ladder position. Employees at Full Performance Level, or FPL, may feel they have no room to advance in their organization, and may feel demotivated. Large numbers of employees at FPL for an extended time may negatively impact employee satisfaction and engagement results in employee surveys.

Full Time

See Work Schedule

Full Time Equivalency

See FTE

Functional Classifications of Science and Engineering Professionals

A Functional Classification is an employee's primary work function as a scientist or engineer.

The functional classification rests on the principle that the coding of positions to categories will be done on the basis of the function in which the individual is "primarily engaged." The primary function is the single functional category which occupies the largest proportion of the employee's time or which best reflects a combination of functions in terms of the paramount requirements of the job. Because of the myriad of different ways in which work is organized in the Federal Government, the categories are not completely discrete. The categories by and large consist of aggregates of sub functions or activities. Cost estimating, for example, is defined as a sub function of other functions such as Development and Planning. Similarly, analysis of data, which is defined as a sub function of Data Collection, Processing, and Analysis, is also performed as a part of Research and other functions. (Even an activity like planning, which constitutes a functional category by itself, may be performed as an integral part of the work of other categories).

Persons engaged in supervision of a function are to be included in the count of those engaged in performing the function.

The major Functional Classifications of USGS Science Professionals include:

11 - Research.

Systematic, critical, intensive investigation directed toward the development of new or fuller scientific knowledge of the subject studied. It may be with or without reference to a specific application. The work involves theoretical, taxonomic, and experimental investigations or simulation of experiments and conditions to:

1. Determine the nature, magnitude, and interrelationships of natural and social phenomena and processes,
2. Create or develop theoretical or experimental means of investigating such phenomena or processes; and
3. Develop the principles, criteria, methods and a body of data of general applicability for use by others. Excluded from this category is work concerned primarily with the administration and monitoring of research contracts and research grants.

13 - Development.

Systematic application of scientific knowledge directed toward the creation of new or substantially improved equipment, materials, instrumentation, devices, systems, mathematical models, processes, techniques, and procedures which will perform a useful function or be suitable for a particular duty.

The work involves such activities as:

1. Establishing requirements for technical objectives and characteristics;
2. Devising and evaluating concepts for design approaches, including: criteria, parameters, characteristics, and interrelationships;
3. Experimenting, investigating, and testing to produce new data, mathematical models, or methods to test concepts, formulate design criteria, and measure and predict natural and social phenomena and performance;
4. Designing and developing prototypes, breadboards, and engineering models including the direction of their fabrication as required;
5. Developing standards and test plans to assure reliability; and
6. Managing specific developments being executed in-house or under contract.

Development, like research, advances the state of the art, but it is further characterized by the creation of specific end-items in the form of equipment or equipment systems ("hardware" development) and/or methodologies, mathematical models, procedures and techniques ("software" development).

31 - Data collection, processing, and analysis.

This category includes the collection, processing, and analysis of general purpose scientific data describing natural and social phenomena. General purpose scientific data include newly gathered statistics, observations, instrument readings, measurements, specimens, and other facts obtained from such activities as statistical and field surveys, exploration, laboratory analyses, photogrammetry, and compilations of operating records for use by others.

The work involves such activities as:

1. Determining data needs and data processing requirements;
2. Planning, directing, and evaluating collection activities performed in-house or under contract;
3. Designing overall processing plans and systems to handle, control, operate, manipulate, reduce, store, check, and retrieve data;
4. Analyzing raw and processed data for validity and subject-matter interpretation;
5. Providing analytic services such as chemical analyses;
6. Forecasting and projecting data and conditions; and
7. Summarizing and presenting data for general use.

Excluded from this category are collection and analysis of data only for research and development projects and internal operating or administrative purposes such as policy formulation and planning.

32 - Scientific and technical information.

The processing and dissemination of published and unpublished technical documents and information on work in progress and completed work to facilitate their use. The work involves developing and implementing information systems through such activities as:

1. Providing for the selection, acquisition, compilation, exchange, and storage of scientific and technical information;
2. Cataloging, abstracting, and indexing information for retrieval and dissemination;

3. Providing reference, literature search and bibliographic services for information users;
4. Interpreting, evaluating, and briefing on the significance and relevance of information;
5. Disseminating information through briefings, technical publications, and other communications media; and
6. Classifying and declassifying technical information where use must be controlled in the national interest.

51 - Natural resource operations.

The development and utilization of Federally-owned and trust lands and natural resources for the purposes of bringing current use into balance with natural processes of renewal to assure sustained yields to meet present and future public needs. Natural resources include land, air, and water and their related products or uses, such as soil, minerals, forage, wildlife, power, and recreation. The work involves implementing programs and projects to inventory, classify, utilize, improve, conserve, regulate, protect, sell, lease, or market natural resources. Resource operations as defined here are concerned with managing and conserving the land and resources in a specified geographic area.

91 - Planning.

The study and projection of present and future needs and the formulation of alternative policies and ways of meeting these needs for the utilization of: Land; natural, social, industrial, material and manpower resources; physical facilities; and social and economic services and programs. The work involves:

1. Gathering, compiling, analyzing, and evaluating data;
2. Projecting needs and establishing goals;
3. Developing single or alternative plans, policies, programs, and recommendations and measures of their economic, social, and political costs, benefits, and feasibility; and
4. Reevaluating progress to assure that plan objectives are realized in putting the plans into effect.

This category includes physical, economic, and social planning for land population centers and missions, policy, and program planning.

92 - Management.

The direction and control of scientific and engineering programs in any one or combination of functions in a line or staff capacity with responsibilities that have a direct and substantial effect on the organizations and programs managed. The work involves decisions, actions, and recommendations that establish the basic content and character of the programs directed in terms of program objectives and priorities, program initiation and content, funding, and allocation of organizational resources.

This category is not intended to cover those primarily engaged in the supervision or monitoring of work carried out through contracts and grants or in contract and grants administration. Such positions are to be coded to the appropriate function.

99 - Other--Not elsewhere classified.

This category is to be used for:

1. Positions with highly specialized activities which are not covered in any of the categories;
2. Positions of such generalized nature that a primary function cannot be identified; and
3. Trainee positions for which functional assignments have not been made.

*For a complete list of Functional Classifications and descriptions, go to the following OPM website:
<http://www.opm.gov/feddata/gp59/cpdf/functionalclass.pdf>*

Gap

Gap is the difference between projected positions and workforce supply. Gap can be a positive number, indicating surplus workforce, or a negative number, indicating unmet projected positions.

Length of Service

Length of Service, or Years of Service is a way of measuring service longevity in association with months of service and days of service.

Average Length of Service can indicate the depth of knowledge and skill level possessed by the workforce and inform planning for training or succession planning.

Intermittent

See Work Schedule

Measurements and Metrics

Measurement is the process of assigning a number to an attribute according to a rule or set of rules. Measurement determines dimension, quantity, or capacity.

A **metric** is a standard of measurement that provides a basis for comparison. It is a system of related measures that facilitate quantitatively and periodically measuring, assessing, controlling or selecting a person, characteristic, process, event, or institution, along with the procedures to carry out measurements and the procedures for the interpretation of the assessment in the light of previous or comparable assessments.

Nature of Action Codes

A Nature of Action Code (or NOAC) is a systematic numeric system for tracking types of Personnel Actions.

*For a complete list of Nature of Action codes and descriptions, go to the following OPM website:
<http://www.opm.gov/feddata/gp59/cpdf/natureaction1.pdf>*

NOAC

See Nature of Action Codes

Occupational Categories

An Occupational Category is the category to which an occupational series belongs. Also known as PATCO.

BLUE COLLAR (Occupational Series 2501 through 9999).

B – Blue Collar. Occupations comprising the trades, crafts, and manual labor (unskilled, semiskilled, and skilled), including foreman and supervisory positions entailing trade, craft, or laboring experience and knowledge as the paramount requirement.

WHITE COLLAR (Occupational Series 0001 through 2299).

P - Professional. White collar occupations that require knowledge in a field of science or learning characteristically acquired through education or training equivalent to a bachelor's or higher degree with major study in or pertinent to the specialized field, as distinguished from general education. The work of a professional occupation requires the exercise of discretion, judgment, and personal responsibility for the application of an organized body of knowledge that is constantly studied to make new discoveries and interpretations, and to improve the data, materials, and methods.

A - Administrative. White collar occupations that involve the exercise of analytical ability, judgment, discretion, and personal responsibility, and the application of a substantial body of knowledge of principles, concepts, and practices applicable to one or more fields of administration or management. While these positions do not require specialized educational majors, they do involve the type of skills (analytical, research, writing, judgment) typically gained through a college level general education, or through progressively responsible experience. Occupation series in this category typically follow a two-grade interval pattern.

T - Technical. White collar occupations that involve work typically associated with and supportive of a professional or administrative field, that is nonroutine in nature; that involves extensive practical knowledge, gained through on-job experience and/or specific training less than that represented by college graduation. Work in these occupations may involve substantial elements of the work of the professional or administrative field, but requires less than full competence in the field involved. Occupation series in this category typically follow a one-grade interval pattern.

C - Clerical. White collar occupations that involve structured work in support of office, business, or fiscal operations; performed in accordance with established policies, or techniques; and requiring training, experience, or working knowledge related to the tasks to be performed.

O - Other White Collar. White collar occupations that cannot be related to the above professional, administrative, technical, or clerical categories. In the USGS, 'O' refers to SCEPs, or Student Career Experience Positions.)

Exception Codes. Some white collar occupational series may include 2 or 3 occupational categories because the occupational category is based on the employee's grade. For example, an occupational series with an exception code of 8 indicates that GS grades 1-4 belong to category T (Technical) and that GS grades 5-15 belong to category A (Administrative).

Occupational Series

An Occupational Series is a numerical designation given to position(s) that have similar specialized work and qualification requirements.

*For a complete list of Occupational Series and descriptions, go to the following OPM website:
<http://www.opm.gov/feodata/gp59/cpdf/occupation.pdf>*

Occupational Series Groups (USGS)

The USGS currently has over 150 separate Occupational Series, more than 100 of which have fewer than 20 employees. In order to track meaningful data while preserving the anonymity of individual employees, USGS has constructed several custom occupational series groupings that roll the smaller occupational series up with the larger. For instance, one group divides occupational series in the USGS into 3 groups: Science, Non-Science, and Hourly.

Organizational Level

Organizational Level is an administrative subdivision to which an employee is assigned.

Overtime

Overtime is defined as any work done in addition to regular working hours. Excess overtime can be an indicator of insufficient staffing or a need for training in additional skills.

Part Time

See Work Schedule

Pathways Appointments

See <https://www.usgs.gov/about/organization/science-support/human-capital/students-and-recent-graduates> for additional information on the Pathways program, including Internship (students), Recent Graduates, and Presidential Management Fellows (PMF) Program.

The Pathways intern (student) program replaced the STEP (Student Temporary Employment Program) and SCEP (Student Career Experience Program) student appointment programs at the beginning of FY 2013. This Program is designed to provide students enrolled in a wide variety of educational institutions, from high school to graduate level, with opportunities to work in agencies and explore Federal careers while still in school and while getting paid for the work performed.

Students in the Pathways Career Intern Program are appointed under the "YEA" or "YEF" current appointing authorities, in conjunction with Tenure Group "2".

Students in the Pathways Temporary Intern Program are appointed under the “YEA” or “YEG” current appointing authorities, in conjunction with Tenure Group “0” or “3”.

Although “Type of Appointment” is also used to identify Pathways Interns (“35” for Career Interns and “45” for Temporary Interns), it is not as reliable as using the Current Appointing Authorities and Tenure Group.

PATCO

Refers to Occupational Categories:

Professional, **A**dministrative, **T**echnical, **C**lerical and **O**ther White Collar.

See Occupational Categories

Permanent, Temporary and Term Appointment Types

See Type of Appointment

Research

See Functional Classifications of Science and Engineering Professionals.

Skill

An observable and measurable expertise needed to perform a task.

Skill Level

A general assessment of the level of expertise required to perform a particular activity. Assessments are made in terms of Entry Level, Journeyman Level, and Expert Level.

Student Career Experience Program - SCEP

Replaced by the Pathways Student Career Interns program.

Students employed in the SCEP program were employed in CO-OP/Intern programs for career development, related to the student's degree field. There was no defined limit of association. Non-

competitive conversion to Perm or Term was possible within 120 days of graduation, in the same or other agency.

SCEPs were hired under NOAC 170 - Excepted Appointments and Legal Appointment Authority Codes: YBM, YGM, Y1M, Y2M, and Y3M.

Student Temporary Employment Program - STEP

Replaced by the Pathways Student Temporary Interns program.

Student STEP appointments included students employed anywhere in any jobs. Appointment could be made for up to 1 year and could be extended as long as the employee continued to meet the definition of "student". The appointment had to be renewed at least annually. No benefits were included. There were no conversion opportunities (other than that STEPs could be converted to SCEPs). STEPs could be reappointed non-competitively to higher grades.

STEPs were hired under NOAC 171 - Excepted Appointments and Legal Appointment Authority Codes: Y1K, Y2K, Y3K, Y4K, and Y5K. STEP appointments could be extended by Extension of Appt NTE - NOAC 760, under the same Authority Code as for initial Excepted Appointment.

Supervisory Status

Supervisory Status denotes the nature of managerial, supervisory, or non-supervisory responsibility assigned to an employee's position.

Supervisory Status Code '2' is the only code recognized by OPM as reflecting an official Supervisor/Manager.

2 - Supervisor or Manager.

Position requires the exercise of supervisory or managerial responsibilities that meet, at least, the minimum requirements for application of the General Schedule Supervisory Guide or similar standards of minimum supervisory responsibility specified by position classification standards or other directives of the applicable pay schedule or system. (Supervises 25% or more of their time.)

4 - Supervisor (CSRA).

Position meets the definition of Supervisor in 5 U.S.C. 7103(a)(10), but does not meet the minimum requirements for application of the General Schedule Supervisory Guide. (Supervises less than 25% of their time.)

5 - Management Official (CSRA).

Position meets the definition of Management Official in 5 U.S.C. 7103(a)(11), but does not meet the General Schedule Supervisory Guide definition of Supervisor/Manager or the definition of Supervisor in 5 U.S.C. 7103(a)(10).

6 - Leader.

Position is titled with the prefix "Lead" and meets the minimum requirements for application of the Work Leader Grade Evaluation Guide; or meets similar minimum requirements for leader responsibilities specified by the job standards or other directives of the applicable pay schedule or system. Position is under a wage system or leads a team performing one-grade interval work.

7 - Team Leader.

Position is titled with the prefix "Lead" and meets the minimum requirements for application of the General Schedule Team Leader Grade-Evaluation Guide; position leads a team of General Schedule employees performing two-grade interval work.

8 - All Other Positions.

Position does not meet the above definition of Supervisor or Manager, Supervisor (CSRA), Management Official (CSRA), Leader, or Team Leader.

Supply Analysis

Supply Analysis is the determination of an organization's current staff demographics to include information such as staff size, skill mix, age, gender, race, tenure, retirement, eligibility, turnover, location, and trends.

Surplus

Surplus is the amount by which the supply exceeds the needs or requirements.

Tenure, or Tenure Group

For purposes of reduction in force, Tenure Group describes the retention group in which an employee is placed based on the employee's type of appointment.

0 - No tenure group.

Employee is in none of the tenure groups established for reduction-in-force purposes.

1 - Tenure Group 1.

Competitive service--Tenure Group 1 includes employees serving under career appointments who either have completed initial appointment probation or are not required to serve initial appointment probation. Excepted service--Tenure Group 1 includes permanent employees whose appointments carry no restriction or condition such as conditional, indefinite, specific time limitation, or trial period.

2 - Tenure Group 2.

Competitive service--Tenure Group 2 includes employees serving under career-conditional appointments, and under career appointments who are serving initial appointment probation. Excepted service--Tenure Group 2 includes employees who are serving trial periods, or whose tenure is equivalent to career-conditional tenure in the competitive service in agencies that have that type of appointment (for example, excepted appointment-conditional).

3 - Tenure Group 3.

Competitive service--Tenure Group 3 includes indefinite employees, employees under temporary appointments pending establishment of registers, employees under term appointments, employees in status quo, and employees under any other non-status non-temporary appointments. Excepted service--Tenure Group 3 includes employees whose tenure is indefinite; that is, without specific time limitation but not actually or potentially permanent, or with a specific time limitation of more than one year; also, employees who, though currently under appointments limited to one year or less, complete one year of current continuous employment.

Tenure, or Years/Length of Service

Tenure, Years of Service, or Length of Service are ways of measuring service longevity in association with months of service and days of service.

Average Tenure, or Years of Service, can indicate the depth of knowledge and skill level possessed by the workforce and inform planning for training or succession planning.

Transaction File

The data in the FPPS Transaction File provides real-time, online access to all personnel actions processed for employees (e.g., hires, separations, retirements, promotions, etc.) initiated by either the Requesting Office or the Servicing Personnel Office. Transaction history began to accumulate when USGS came up on FPPS, 5/10/1998. Data is queried using date ranges, and there can be multiple results per employee. USGS demographics data from the Transaction File includes only completed personnel actions.

Type of Appointment

Type of Appointment identifies the appointment type an employee is serving under in competitive, excepted, SES or Executive level positions.

The Percentage of Non-Permanent Employees in the Workforce is an indicator of Workforce Flexibility.

PERMANENT APPOINTMENTS:

- 10 - Career (Competitive Service Permanent).
- 15 - Career-Conditional (Competitive Service Permanent).
- 30 - Schedule A (Excepted Service Permanent).

- 32 - Schedule B (Excepted Service Permanent).
- 34 - Schedule C (Excepted Service Permanent).
- 36 - Executive (Excepted Service Permanent).
- 38 - Other (Excepted Service Permanent).
- 50 - Career (Senior Executive Service Permanent).
- 55 - Noncareer (Senior Executive Service Permanent).

TEMPORARY APPOINTMENTS

- 20 - Nonpermanent (Competitive Service Nonpermanent) where Tenure Group DOES NOT EQUAL '3'
- 40 - Schedule A (Excepted Service Nonpermanent).
- 42 - Schedule B (Excepted Service Nonpermanent).
- 44 - Schedule C (Excepted Service Nonpermanent).
- 46 - Executive (Excepted Service Nonpermanent).
- 48 - Other (Excepted Service Nonpermanent).
- 60 - Limited Term (Senior Executive Service Nonpermanent).
- 65 - Limited Emergency (Senior Executive Service Nonpermanent).

TERM APPOINTMENTS:

- 20 - Nonpermanent (Competitive Service Nonpermanent) COMBINED with Tenure Group '3'
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USGS Organizational Structure

- See Area (USGS Organizational Structure).
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Work Schedule

Work Schedule describes the time basis on which an employee is scheduled to work.

FULL TIME: WORK-SCHEDULE = F OR G

PART TIME: WORK-SCHEDULE = P, Q, S, OR T

INTERMITTENT: WORK-SCHEDULE = I OR J

F - Full-time.

A schedule that usually requires an employee to work 40 hours as prescribed by the administrative work week for that particular employment group or class.

G - Full-time seasonal.

A schedule that requires an employee to work full-time for less than 12 months each year on an annually recurring basis.

I - Intermittent.

A schedule that requires an employee to work an irregular number of hours or days for which there is no prearranged scheduled tour of duty.

J - Intermittent seasonal.

A schedule that requires an employee to work less than 12 months a year on an annually recurring basis, and that requires an employee to work an irregular number of hours or days for which there is no prearranged scheduled tour of duty.

P - Part-time.

A schedule that requires an employee to work less than full-time, but for a specific number of hours (usually 16-32 per administrative work week) on a prearranged scheduled tour of duty.

Q - Part-time seasonal.

A schedule that requires an employee to work part-time for less than 12 months each year on an annually recurring basis.

S - Part-time job sharer.

A schedule that requires an employee who is job sharing to work less than full-time, but for a specific number of hours (usually 16-32 per administrative work week) on a prearranged scheduled tour of duty.

T - Part-time seasonal job sharer.

A schedule that requires an employee who is job sharing to work part-time for less than 12 months each year on an annually recurring basis.

Workforce Flexibility

The use of Other than Permanent appointments (Temporary and Term) increases USGS' flexibility in getting work done by using all employment options to meet changing work requirements. Flexibility can also be found in employing Contractors and Volunteers, but they cannot be tracked in FPPS.

An organization's ability to quickly expand or contract in anticipation or as a result of program changes, reduced budgets, etc. is to a degree based upon the type of appointments (permanent, term or temporary) of the workforce. The occupational category that provides the most flexibility is Science Technical, where the USGS has traditionally utilized a large student workforce.

(Referenced in the USGS Strategic Plan; People Strategic Goal; Thrusts)

Workforce Planning

Workforce Planning is a systematic process for identifying the human capital required to meet bureau goals and developing the strategies to meet these requirements. The workforce planning process provides the information necessary to make people and workforce decisions within the context of the bureau's strategic direction.

Years of Service

Years of Service, or Length of Service, is a way of measuring service longevity in association with months of service and days of service.

Average Years of Service can indicate the depth of knowledge and skill level possessed by the workforce and inform planning for training or succession planning.

Measures and Metrics: Definitions and Formulas

There is no definitive group or authority that sets definitive definitions, rules or formulas for human capital metrics. As a result, commonly used human capital metric terms may, in fact, be derived from a fairly wide variety of formulas and definitions. Many of the most commonly used terms, such as Attrition, Termination, and Turnover, have the largest variety of approaches, definitions, and formulas. Many of the terms that are fairly standardized are also confusing as to whether they include all employees, or are limited to permanent employees.

The USGS Human Resources Office has researched a wide variety of generally accepted human capital metrics, and established standardized definitions and formulas that use descriptive terms to eliminate confusion in understanding the USGS Workforce Demographics, Metrics and Measures data.

Accessions

See Hires

Appointments

See Hires

Attrition

FORMULA: $((\text{Separations} \times 100) / (\text{Beginning of FY Employment} + \text{Hires})) / 100$

Attrition measures employee losses due to resignations, reassignments, deaths, etc., in a fiscal year, and factors in the impact of Hires on the workforce at the beginning of the fiscal year. Some versions of "attrition" formulas do not include retirements; USGS includes retirements. FPPS allows us to capture transfers into the USGS, but not out of the USGS, so transfers out of the USGS are not included.

See Separations

Average Age

The Average Age of all Permanent active employees, NOT including Student SCEPs.

Average Cost of Benefits, Percentage

FORMULA: ((Total Cost of Benefits Gross Year to Date / Total Gross Year to Date Salary) * 100)

Represents total of gross year to date benefits costs as a percentage of Salary. This measure helps track one of the causes of salary cost inflation. It does not indicate the quality of the benefits themselves. Because this measure uses Year to Date totals, it uses salary data from FPPS as of the end of the Pay Year.

Average

Averages mask outliers or extremes. Distributions give a much more detailed look at the workforce and provide more information for trends and analysis.

Average Grade

The Average Grade of all Permanent active employees in General Schedule Pay Plans, NOT including Student SCEPs. Only employees in General Schedule Pay Plans are included because they form the bulk of employees, and other Pay Plan groups or systems are too different to combine with them. The Average Grade helps identify grade inflation, or creep, across time.

Also see Grade.

Average Salary

Average Salary is the Average Salary or Pay Rate of all Permanent active employees, NOT including Student SCEPs.

Headquarters average salary will be higher than Regional or Field because of the concentration of employees in higher grades and the SES, SL and ST Pay Plans.

Average Years of Service

The Average number of years all Permanent active employees (NOT including Student SCEPs) have been in Federal service. It is based on Years of Service, which is one way of measuring service longevity.

A high Average Years of Service usually indicates significant experience and organizational knowledge. Low Average Years of Service can indicate high turnover levels or fast growth, which also probably means limited knowledge of the organization, policies, and processes, and may indicate the need for additional training.

Distribution

Distributions allow the classification or categorization of data in a relationship, and show the full range of data unmasked, unlike averages.

Flexibility, Workforce

See Type of Appointment

Full Performance Level (FPL)

Employees at Full Performance Level, or FPL, may feel they have no room to advance in their organization, and may feel demotivated. Large numbers or percentages of employees at FPL for an extended time may negatively impact employee satisfaction and engagement results in employee surveys.

Grade

Grade is an indicator of hierarchical relationships among positions covered by the same pay plan or system. It indicates a class of positions that are sufficiently equivalent to warrant their inclusion within the same range of rates of pay.

Hires

Represents external hires, pulled from all Personnel Transactions with NOAC 100 to 199.

Hires does not capture internal accessions, which are problematic because they are spread among many types of Personnel Actions. For instance, a Promotion may be the action by which an employee moves to another internal organization, or to a new position within the current organization, or it may be a simple change of grade.

NOTE: Prior to FY 2005, Type of Appointment was not captured in the Transaction File from which Hires data is pulled, and it was not possible to separate out Hires of employees on Permanent Appointments from other Hires. However, NOA codes themselves can be used to separate out most Permanent Appointments by looking at NOACs 100, 101, 130, 140, 141, 142, 143, 145, and 170.

Types of Personnel Actions included in HIRES (Also called Accessions or Appointments.)

- 100 - Career Appointment. (Career Appt)
- 101 - Career-Conditional Appointment. (Career-Cond Appt)
- 107 - Emergency Appointment. (Emergency Appt)
- 108 - Term Appointment Not-to-exceed (date). (Term Appt NTE (date))
- 115 - Appointment Not-to-exceed (date). (Appt NTE (date))
- 120 - Overseas Limited Appointment. (O/S Ltd Appt)
- 122 - Overseas Limited Appointment Not-to-exceed (date). (O/S Ltd Appt NTE (date))

- 124 - Appointment-Status Quo. (Appt-Status Quo)
 - 130 - Transfer. (Transfer)
 - 140 - Reinstatement-Career. (Reins-Career)
 - 141 - Reinstatement-Career-Conditional. (Reins-Career-Cond)
 - 142 - Senior Executive Service Career Appointment. (SES Career Appt)
 - 143 - Reinstatement-Senior Executive Service Career. (Reins-SES Career)
 - 145 - Transfer-Senior Executive Service Career. (Transfer SES Career)
 - 146 - Senior Executive Service Noncareer Appointment. (SES Noncareer Appt)
 - 147 - Transfer-Senior Executive Service Noncareer. (Transfer SES Noncareer)
 - 148 - Senior Executive Service Limited Term Appointment Not-to-exceed (date). (SES Ltd Term Appt NTE (date))
 - 149 - Senior Executive Service Limited Emergency Appointment Not-to-exceed (date). (SES Ltd Emergency Appt NTE (date))
 - 170 - Excepted Appointment. (Exc Appt)
 - 171 - Excepted Appointment Not-to-exceed (date). (Exc Appt NTE (date))
 - 190 - Provisional Appointment Not-to-exceed (date). (Provisional Appt NTE (date))
 - 198 - Interim Appointment in Nonduty Status. (Interim Appt in Nonduty Status)
 - 199 - Interim Appointment. (Interim Appt)
-

Involuntary Separations

Represents all INVOLUNTARY (employer initiated) separations from the USGS relative to the average size of the workforce. Involuntary Separations are personnel Transactions with the following NOACs:

- 304 - Retirement-In Lieu of Involuntary Action. (Retirement-ILIA)
 - 312 - Resignation-In Lieu of Involuntary Action. (Resignation-ILIA)
 - 330 - Removal.
 - 356 - Separation-RIF.
 - 357 - Termination.
 - 385 - Termination during probationary/trial period.
-

Involuntary Rate of Separations

FORMULA: ((Involuntary Separations / Total Separations) * 100)

This rate can show the effectiveness of performance issue outcomes, downsizing, or organizational shifts. On the other hand, it may indicate effectiveness or ineffectiveness of recruitment quality, onboarding or training programs, or other process failures.

LOE, or Length of Eligibility

LOE represents the length of time USGS employees remained employed in the USGS after they first became eligible to retire. This number is calculated manually by subtracting "Date Retirement Eligible" in the Combined History File from the actual date of retirement ("Effective Date") in the Transaction File for former employees who took NOAC 302 - Voluntary Retirements.

The computed LOE for particular groups of like employees can be used to project future retirements by adding the LOE (converted to number of additional days of employment past retirement eligible date) to each employees retirement eligible date within that like group.

LOE can be used to analyze efficacy of Buyout/"Early Out" authorities. The LOE associated with NOAC 303 - Special Option Retirements (Buyouts/Early Outs) can be used to see how much BEFORE Optional Retirement Eligibility those taking Early Retirement actually leave. This "negative" LOE can be used to estimate salary and benefits savings, and comparisons of Buyout costs versus costs of Adverse Actions, such as Reductions-In-Force (RIF). Also keep in mind that this "negative" LOE should be ADDED to the LOE for Optional Retirement. For instance, a group of employees may have an historic LOE rate for Buyouts of -2.03. They also have an LOE for Optional Retirement of 3.2. When looking at cost savings, the LOE for Optional Retirement which is used to project retirements can be added to the LOE for Buyouts, which would estimate that the particular group of employees would retire under an Early Out Authority 5.23 years before they normally would, given historical trends. (CAVEAT: numbers of employees involved in Buyouts are relatively low, so these LOE averages are more subject to being skewed by outliers.)

LOE for Early Outs can also be used to plan Buyout authorities. If employees in a category have a low LOE (do not retire much before regular eligibility), then the cost of implementing a Buyout authorization may not be justified. However, if certain employee groups show a large negative LOE (retire much earlier than when they would regularly become eligible), then using a Buyout authority with those employee groups may have a good chance of achieving salary/benefit cost savings in organizations being considered for downsizing, and the costs associated with a Buyout may be more justified.

See also Retirement Projection.

Net Hire Ratio

FORMULA: (Total Hires / Total Separations)

The Net Hire Ratio measures the number of Hires that replace Separated employees. It indicates whether the workforce is expanding or contracting by showing how many losses and organization is replacing.

- A negative Net Hire ratio indicates a contracting, or shrinking, workforce.
- A positive Net Hire ratio indicates an expanding, or growing, workforce.
- A 100% Net Hire ratio indicates that the organization is replacing all its losses.

Comparing Hires with Separations allows us to monitor the churn of the workforce, and is helpful in Workforce Planning. The Net Hire Ratio is also helpful in developing strategic HR priorities. An expanding workforce may require focus on training, while a contracting workforce may require focus on productivity and key employee retention. A negative Net Hire Ratio may indicate the need to look at whether current recruitment, onboarding, and training programs are effective. A negative Net Hire Ratio may also show that a planned downsizing effort grounded on attrition or restructuring is effective.

The Net Hire ratio does not include internal transfers, and may not accurately show overall organizational change. It also does not reflect the magnitude of hires and separations. The ratio of 500 hires to 500 separations is the same as 5,000 hires to 5,000 separations.

Non-Supervisor to Supervisor Ratio

FORMULA: (Number of Non-Supervisors / Number of Supervisors)

Higher numbers are usually regarded as good because they indicate more employees reporting to fewer supervisor/managers.

However, this ratio does NOT indicate span of control because FPPS cannot indicate the direct reports associated with individual supervisors. This ratio becomes more and more inaccurate the lower down in the organizational structure it is used, because employees are often supervised by supervisor/managers in umbrella organization codes. Lower level organizations would show artificially high ratios of non-supervisors to supervisors since their supervisors are often located in upper level organizational codes, while upper level organizations would show artificially low ratios because many of their reports show against lower level organizational codes.

Projected Retirement

See Retirement Projection

Resignation Rate of Separations

FORMULA: (Resignations) / (Total Separations) * 100

Resignation Rate of Separations is the percentage of Total Separations that are Resignations in the Fiscal Year. Resignations are employee initiated separations, and may indicate undesirable losses. The majority of resignations (more than half) occur within the first 5 Years of Service. Employee survey results may give indicators of reasons. If the Resignation Rate of Separations increases, an investigation may be in order to minimize further losses.

Retention Rate

FORMULA: (Beginning Employment + Total Hires - Total Separations) / (Beginning Employment + Total Hires) * 100

Retention Rate is the percentage of the count of all employees that did not separate in the Fiscal Year. This metric does NOT track the retention of individual employees. It also does not indicate the level of turnover resulting from employee initiated versus employer initiated actions, or specific reasons for terminations.

Retirement Eligibility

ESTIMATED date employee was eligible, or will become eligible, for Voluntary (Optional) Retirement. Date Retirement Eligibility is computed within FPPS based on an employee's "Retirement Plan" and "Date Service Comp Retire". If "Date Service Comp Retire" has not been computed for the employee, then "Date Service Comp Leave" is used. This date is recomputed at the time of actual retirement, and may change

because of temporary employment, periods of leave without pay, military service, etc.. It is an ESTIMATE ONLY.

Retirement Projection

DOI and other agencies and bureaus compute projected retirement dates by adding 3.1 years to every "Date Retirement Eligible", which has been the average Length of Eligibility (LOE) of Federal employees. LOE looks at actual optional retirees from the past, subtracts the date they become eligible to retire from the date they actually retire. However, data shows that LOEs in the USGS can vary from 0 (retirement as soon as eligible) to almost 25 years after eligibility, and that there are LOE trends for certain types of employees. USGS Office of Human Resources has developed a more refined approach to improve our ability to anticipate losses due to Optional Retirements and improve our Workforce Planning processes.

USGS computes the 3-Fiscal Year Average LOE of past optional retirees for groups of employees that have a large enough number of retirements to make the average meaningful. This Average LOE is converted to number of days, and then added to appropriate employees' "Date Retirement Eligible" to estimate a projected date for each employee's retirement. Those projected dates are then used to project USGS retirements by various selected groups of employees.

If there is no 'Date Retirement Eligibility', or if the employee is on a student appointment, then the employee is classified as 'Not Eligible' for Optional Retirement.

Retirement Rate

FORMULA: $((\text{Actual Optional Retirements NOAC 302} / \text{Eligible for Optional Retirement NOAC 302}) * 100)$

Retirement Rate gives the actual historic rate of retirements, which is much lower than retirement eligibility. Retirement Rate across time can show the impacts of the economy, downsizing, and other external and internal factors that influence employee choices.

Separations (from Federal Service)

Separations represent all separations from Federal service, pulled from all personnel Transactions with NOAC 300 to 399. These types of Separations are also often referred to as Attrition.

In calculating separation rates, we use the average of employment at the beginning and end of the fiscal year to allow for instances where there is a large increase or decrease in the population during the year.

Regular, normal separation rates do not control for unusual events, such as Reductions In Force (RIFs) or Buyouts and Early Out authorities, and these anomalies will inflate separation rates.

NOTE: Prior to FY 2005, Type of Appointment was not captured in the Transaction File from which Separations data is pulled, and it was not possible to separate out Separations of employees on Permanent Appointments from other Separations. There are no NOA codes for Separations that are associated with Permanent Appointments, so it is not possible to look at Separations of Permanent employees prior to FY 2005.

- 300 - Retirement-Mandatory
 - 301 - Retirement-Disability
 - 302 - Retirement-Voluntary (Also called Optional Retirement.)
 - 303 - Retirement-Special Option (Also called Early Out)
 - 304 - Retirement-In Lieu of Involuntary Action (Retirement-ILIA)
 - 312 - Resignation-In Lieu of Involuntary Action (Resignation-ILIA)
 - 317 - Resignation
 - 330 - Removal
 - 350 - Death
 - 351 - Termination-Sponsor Relocating
 - 352 - Termination-Appointment in (agency)
 - 353 - Separation-US
 - 355 - Termination-Expiration of Appointment
 - 356 - Separation-RIF
 - 357 - Termination
 - 385 - Termination during probationary/trial period
 - 390 - Separation-Appt In (name of entity/agency)
-

Separation Rate

FORMULA: $((\text{Total Separations} / \text{Average Employment in FY}) * 100)$

Analyzing the Separation Rate of organizations can identify areas needing corrective action, such as skill gaps or supervisory training. The Separation Rate does not differentiate between employee and employer-initiated separations, or the reasons for the separations.

This rate is based on Average Employment during the Fiscal Year $((\text{Beginning Employment} + \text{Ending Employment}) / 2)$, which factors in large gains or losses during the Fiscal Year. Compare this Separation Rate with the Typical Turnover Rate, which is based on the beginning FY employment, to take analyze the impact of major employment fluctuations.

Strength

Strength is a term typically used in military workforce planning, and refers to the number of active employees on board.

Supervisory Ratio

See Non-Supervisor to Supervisor Ratio

Temporary and Term Rates of Employment

The percentage of employees on Temporary and Term (or Non-Permanent) appointments shows the flexibility of the workforce in meeting potential change (downsizing and other organizational shifts, or

changes in type of work and requirements). Non-Permanent appointments may be used as a sort of trial period, or they may be used as essentially a contingent workforce that allows for changes in work requirements.

Tenure

See Average Years of Service

See also Tenure Group

Termination

See Separations

Turnover

See also Separation Rate

Turnover Rate, Adjusted

FORMULA: $(\text{Total Separations} - \text{Total Hires} / \text{Beginning of FY Employment})$

The Adjusted Turnover Rate removes the impact of new hires, which make up the majority of gains. The result is an estimate of losses which factors out resignations that come from new hires within the first Year of Service. Most new hires will be lost within the first 5 Years of Service.

The Turnover, or Separation, Rate of organizations can identify areas needing corrective action, such as skill gaps or supervisory training. It does not differentiate between employee and employer-initiated separations, or the reasons for the separations.

Turnover Replacement Ratio

See Net Hire Ratio

Turnover Rate, Typical

FORMULA: $((\text{Total Separations} / \text{Beginning of FY Employment}) * 100)$

The Turnover, or Separation, Rate of organizations can identify areas needing corrective action, such as skill gaps or supervisory training. High Turnover Rates correspond with higher costs of recruitment and selection, loss of skills, training and knowledge, and loss of productivity during replacement. The Turnover Rate does not differentiate between employee and employer-initiated separations, or the reasons for the separations.

Consider the Separation Rate along with the Typical Turnover Rate when there have been large fluctuations of employment during a Fiscal Year.

Workforce Flexibility

The percentage of employees who are non-Permanent. An organization's ability to quickly expand or contract in anticipation of or as a result of program changes, reduced budgets, etc. is to a degree based upon the type of appointments (permanent, term or temporary) of the workforce.

The use of options other than Permanent appointments (Temporary and Term appointments, Contracts, and Volunteers) increases USGS' flexibility in getting work done by meeting changing needs through the use of all employment options. FPPS can only track Federal employees, including Scientists Emeritus. Information on Contracts and Volunteers comes from other sources.

(Referenced in the USGS Strategic Plan; People Strategic Goal; Thrusts)

For questions on this [USGS Workforce Planning Data Guide](#), contact:

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